

# **AMENDMENTS TO THE CLAIMS:**

The following Listing of the Claims will replace all prior versions and all prior listings of the claims in the present application:

1. (Currently amended) A method comprising:
  - i) injecting oxygen (O<sub>2</sub>) or air to a liquid aqueous biocidal mixture containing hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) at an initial concentration of from 2 to 250 ppm;
  - ii) supplying a ~~suspension~~of magnesium oxide to the hydrogen peroxide ~~containing~~ containing mixture ~~at a~~ and adjusting a pH of the mixture containing hydrogen peroxide and magnesium oxide to a value of from 7.2 to 9.7, the magnesium oxide concentration within the said mixture being of from 2 ppm to 250 ppm;
  - iii) ~~adjusting the pH of the mixture of (ii) to a value of from 7.2 to 9.7; and~~
  - ~~iv) iii)~~ irradiating the mixture containing hydrogen peroxide and magnesium oxide with UV light having a wavelength of from 190 to 390 nm;  
wherein the method is performed at ambient temperature and an enhanced generation of hydroxyl radicals (OH\*) is provided, the enhanced generation being characterized by at least a two fold increase in percentage (%) of salicylic acid (SA) conversion as compared to % conversion of SA conversion as a result of treatment with UV only.
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Currently amended) The method of claim 1, wherein the oxygen is injected ~~supplied~~ to the liquid aqueous biocidal mixture to saturation.
6. (Canceled)
7. (Canceled)
8. (Previously presented) The method of claim 1, wherein the initial concentration of hydrogen peroxide in the liquid aqueous biocidal mixture is from 10 ppm to 50 ppm, and the concentration of magnesium oxide in the mixture is from 10 to 50 ppm.
9. (Canceled)
10. (Canceled)
11. (Previously presented) The method of claim 1, wherein the mixture is mixed after supplying the magnesium oxide, the mixing is for a period of time sufficient to

generate a desired amount of hydroxyl radicals.

12. (Previously presented) The method of claim 11, wherein the desired amount of hydroxyl radicals is sufficient to achieve a biocidal effect in the mixture.

13. (Previously presented) The method of claim 11, wherein said period of time is from 3 seconds to 5 hours.

14. (Previously presented) The method of claim 13, wherein said period of time is from 30 second to 100 minutes.

15. (Previously presented) The method of claim 11, wherein said period of time is more than 5 hours.

16. (Previously presented) The method of claim 11, wherein the desired amount of hydroxyl radicals generated in the mixture is a predetermined quantity.

17. (C a n c e l e d)

18. (C a n c e l e d)

19. (Currently amended) The method of claim 11, further comprising quantification of the desired amount of hydroxyl radicals, the quantification comprising reacting the hydroxyl radicals, if present in the mixture, with salicylic acid.

20. (Previously presented) The method of claim 1, wherein the liquid aqueous biocidal mixture is water selected from the group consisting of sea water and municipal effluent water.

21. (New) The method of claim 1, wherein the method is performed in a single reaction vessel.

22. (New) A method comprising:

supplying a suspension of magnesium oxide to a liquid aqueous biocidal mixture containing hydrogen peroxide ( $H_2O_2$ ) and adjusting a pH of the mixture containing hydrogen peroxide and magnesium oxide to a value of from 7.2 to 9.7, wherein the magnesium oxide is supplied at a concentration ranging from 2 ppm to 250 ppm, and wherein the hydrogen peroxide is at an initial concentration within the mixture of from 2 to 250 ppm;

injecting oxygen ( $O_2$ ) or air to the mixture containing hydrogen peroxide and magnesium oxide; and

irradiating the mixture containing hydrogen peroxide and magnesium oxide with UV light having a wavelength of from 190 to 390 nm,

wherein the method is performed at ambient temperature and an enhanced generation of hydroxyl radicals ( $\text{OH}^*$ ) is provided, the enhanced generation being characterized by at least a two fold increase in percentage (%) of salicylic acid (SA) conversion as compared to % conversion of SA conversion as a result of treatment with UV only.

23. (New) The method of claim 22, wherein the oxygen is injected to the mixture to saturation.
24. (New) The method of claim 22, wherein the mixture is mixed after supplying the magnesium oxide, the mixing is for a period of time sufficient to generate a desired amount of hydroxyl radicals.
25. (New) The method of claim 24, further comprising quantification of the desired amount of hydroxyl radicals, the quantification comprising reacting the hydroxyl radicals, if present in the mixture, with salicylic acid.
26. (New) The method of claim 22, wherein the liquid aqueous biocidal mixture is water selected from the group consisting of sea water and municipal effluent water.
27. (New) The method of claim 22, wherein the method is performed in a single reaction vessel.